Attorney's Docket: 2000DE443
Serial No.: 10/003,656
Response to Office Action mailed 3/24/2004

REMARKS

The Office Action mailed March24, 2004 has been carefully considered together with each of the references cited therein. The amendments and remarks presented herein are believed to be fully responsive to the Office Action. Reconsideration of the present Application in view of the following remarks is respectfully requested.

Applicant has amended the Application to attend to housekeeping matters and to more clearly describe the invention. Claim 3 was amended to insert the word "of" in line 3 between the words "mixture" and "isobutene". Claim 10 was amended to more clearly state that the ester recited in the line after the formula is "the ester of alkenylsuccinic **anhydride** which is obtained by reaction of an alkenylsucenic anhydride **of formula (I)**. Support for this amendment may be found in originally filed claim 3 and claim 10. It is not believed that any new matter was introduced by these amendments, and that no additional search is required by the office.

Claim 3, and 10 and 20-24 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention in claim 3 for omission of the word "of" between "mixture" and "isobutene" in line 3, and in claim 10 for the incomplete reference to the "alkenylsuccinic anhydride of formula (I). Claims 3 and 10 were amended to correct the confusing references. Therefore the rejection of claims 3, 10, and 20-24 as amended under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention should be removed in view of the above amendments.

Applicant's invention relates to the discovery that new compositions of cosmetics and pharmaceuticals can be formulated with emulsifiers derived from alkenylsuccinic acid and anhydride derivatives, such as esters thereof when the acid or anhydride group is linked to a mono- and/or polyfunctional alcohol. Cosmetic formulations with and without fragrance prepared with the emulsifier based on the alkenylsuccinic acid or anhydride were found to provide stable emulsions, provided good skin compatibility, and good compatibility with customary cosmetic ingredients.

Similarly, pharmaceutical formulations based on emulsifiers of the present invention had good compatibly with pharmaceutical ingredients and provided high stability.

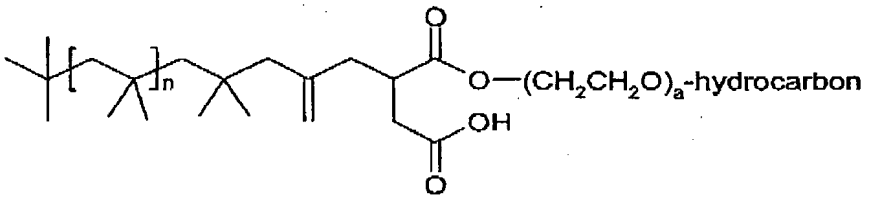
Claims 3, 10, and 20-24 stand rejected under 35 USC § 103(a) as being unpatentable over Eierdanz et al. (5,650,158) in view of Carey et al. (XP-002950021) and in view of *The Handbook of Cosmetic Science and Technology*. This rejection is respectfully traversed. The examiner rejected claim10 on the basis that US 5,560,158 to Eierdanz et al. ('158) would teach compounds similar to those described in claim 10 of the instant application, but without the polyisobutenyl group. The examiner relied on the Carey et al. reference to teach that the polyisobutenyl group would be advantageous and therefore, a combination of the '158 reference and the reference of Carey et al. would lead to the emulsifiers of claim 10 of the instant application. However, this is not correct. The compounds of claim 10 of the instant application are esters of succinic anhydride. These compounds comprise two functional parts:

a **hydrophobic** part (a polyisobutenyl group with at least 28 carbon atoms – according to claim 10 of the instant application wherein **n is equal or greater than 4**), and

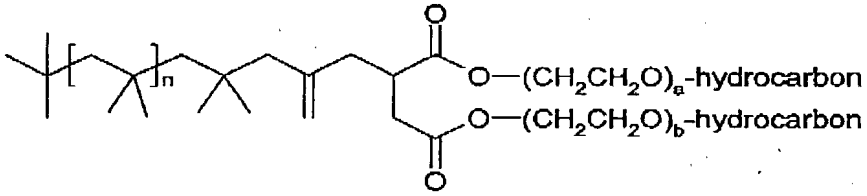
a **hydrophilic** part (the ester groups and the groups attached to the ester group and resulting from the alcohol used to prepare the ester).

The examiner correctly states that the '158 reference is silent on the hydrophobic polyisobutenyl group. However, the '158 reference also does not disclose the particular hydrophilic part of the compounds recited in claim 10 of the subject application and is limited to a maximum of 22 carbon atoms. To introduce the hydrophobic polyisobutenyl group would result in an increase the number of carbon atoms in this group at least 28. According to claim 10, the hydrophilic part comprises an ester group. The ester group results from the reaction of the alkenylsuccinic anhydride of formula (I) with a mono- and/or polyfunctional alcohol. Thus, the compounds of claim 10 of the instant application are compounds comprising one ester group –COO- and one carboxylic group -COOH (monoester) or two ester groups (diester). Attached to the ester groups are alkyleneoxy groups and attached

to these alkyleneoxy groups are hydrocarbon groups. The alkyleneoxy and the hydrocarbon groups originate from the alcohol used to prepare the ester. The compounds according to claim 10 of the instant application are illustrated hereinbelow for the case wherein the alkyleneoxy is ethyleneoxy $-CH_2CH_2O-$:



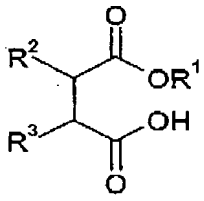
monoester



diester

A further example for the compounds according to the instant invention can be found in Applicant's preparation example 4 at paragraph [0070] of Applicant's Specification wherein only one of the carboxylic functions originating from the succinic acid anhydride is esterified. Thus, the compounds of the instant invention are different from the compounds of the '158 reference.

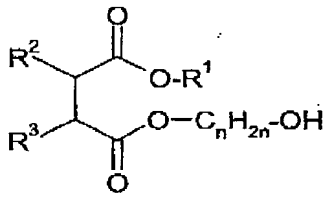
In column 1, line 63 – column 2, line 53 of the '158 reference it is disclosed how the compounds of the '158 reference can be prepared. A succinic anhydride substituted with a hydrophobic alkenyl group containing only **12 to 22** carbon atoms (see the meaning for R^2 and R^3 in formula II of the '158 reference at column 2, lines 10-20, and lines 43-53) is esterified with an alcohol R^1OH and a monoester according to the following formula will be formed:



monoester

The definition for R^1 is given in the '158 reference at column 1, lines 45-47. However, the hydrophilic part of these compounds is different from the hydrophilic part of the compounds according to claim 10 of the instant application.

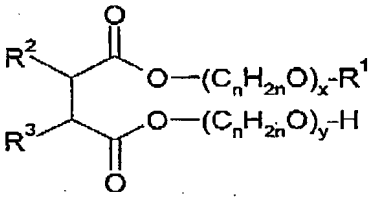
The alkoxylation of the monoester is carried out with ethylene oxide or propylene oxide. At first, the carboxylic function of the monoester that is not esterified will react (see column 2, lines 35-38 of the '158 reference). Therefore, if only one molecule of monoester and one molecule of alkylene oxide are used in the reaction the following compounds will result:



n = 2 or 3

However, these compounds also comprise a different hydrophilic part than the compounds according to claim 10 of the instant application.

In the other case, i.e. not only one molecule of monoester but more than one molecule (x+y molecules) of alkylene oxide are used in the reaction the compounds of the following formula are produced (in column 2, lines 43-53 of the '158 reference these compounds are also referred to as "the main component of the reaction mixture"):



x = 0 - 20
y = 0 - 20

However, since – as stated above – the carboxylic function COOH of the monoester that is not esterified will react preferably. It is not possible to obtain compounds of the above formula wherein x is greater than 0 and y is 0. Thus, the compounds formed according to the teaching of the ´158 reference will always have a different hydrophilic part than the compounds according to claim 10 of the instant application.

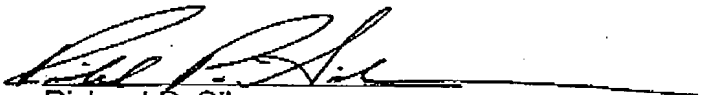
To arrive at the compounds of claim 10 from the compounds of the ´158 reference, the skilled person would have to change these compounds **substantially**. Furthermore to introduce the hydrophobic polyisobutenyl group would result in an increase the number of carbon atoms in this group from 12 to 22 to at least 28, which is above that specified in the '158 reference (See claim 1 and column 2, line 22). Furthermore, he also would have to change the hydrophilic part of the compounds of the ´158 reference to a polyisobutenyl which is not taught or suggested by the '158 reference, which the examiner suggests can be combined from the Carey et al. reference. However, this is not a "trivial" task, because one skilled in the art would have to change the synthesis route of the ´158 reference as shown hereinabove to be able to obtain the hydrophilic part of the compounds of claim 10 of the instant application. Thus, no one skilled in the art would find any motivation or suggestion in the '158 reference or the combination of the '158 reference with the article by Carey et al. to perform these modifications and arrive at Applicant's compound. Therefore, the rejection of Claims 3, 10, and 20-24 under 35 USC § 103(a) as being unpatentable over Eierdanz et al. (5,650,158) in view of Carey et al. (XP-002950021) and in view of *The Handbook of Cosmetic Science and Technology,* should be withdrawn for the reason that the '158 reference disclosing a compound with an alkenyl group of at most 22 carbon atoms does not fairly teach or suggest the compound claimed by the applicant which has a hydrophobic part

having at least 28 carbons, and that one skilled in the cosmetic and pharmaceutical art would not be motivated to modify the compound of the '158 reference with polyisobuteneyl the Carey et al. reference to obtain the instant invention, because that would require a substantial modification to the '158 reference, and that any determination that applicants compound was obvious-to-try is based on improper hindsight. The *Handbook* reference appears to have been relied on for the inclusion of a fragrance as a material which is generally combined with cosmetic emulsifiers, but the examiner has failed to produce showing that Applicant's emulsifier is obvious from a combination of the '158 and the Carey et al. references.

It is respectfully submitted that, in view of the above remarks, the objection to the Specification, the rejections under 35 U.S.C. 112 and 103(a), should be withdrawn and that this application is in a condition for an allowance of all pending claims. Accordingly, favorable reconsideration and an allowance of all pending claims are courteously solicited.

An early and favorable action is courteously solicited.

Respectfully submitted,



Richard P. Silverman
Registration No. 36,277
Agent for Applicants

(CUSTOMER NUMBER 25,255)

CLARIANT CORPORATION
INDUSTRIAL PROPERTY DEPARTMENT
4000 Monroe Road
Charlotte, NC 28205
Telephone: (704) 331-7156
Facsimile: (704) 331-7707